NEWSLINE

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FROM THE DIRECTOR

Michael Anastasio

Reviews get under way to ensure vitality of workforce

As the senior leadership of the Laboratory, we have made a commitment to placing a high priority on ensuring the vitality of our workforce. Our goals include assuring the Laboratory has the personnel to meet current and evolving programmatic commitments, that we are thoughtful and strategic in how we recruit and retain the best talent available, that we develop the next generation of leaders at all levels, that we manage our employees to enable them to fulfill their potential, and that we achieve our objectives with regard to workforce diversity.

To help us reach these goals, I have established workforce reviews as a tool to engage us in a structured discussion, and to provide an additional venue for ensuring our accountability as leaders. Workforce reviews kick off today, beginning with Laboratory Services, and will continue over the next several weeks until all directorates have conducted a review.

My objective is to make this formal process a component of our annual workforce planning, such that it will facilitate the development of strategies, influence institutional initiatives, and inform decisions we make in this regard. Each directorate will review its strategies to accomplish goals and to identify issues that impact the ability to deliver on those goals for the near and long term.

Implementation of workforce reviews was discussed during the Senior Management Offsite held last February. During that meeting, some directorates were already focusing on key workforce issues, particularly recruitment and retention, quality of the work environment, mentoring and diversity, to name a few. With so many mangers agreeing that securing the best and brightest workforce should remain a high priority for the Laboratory, it was naturally decided that workforce reviews would be implemented.

These reviews will provide all directorates with the opportunity to see how other groups are doing in the execution of their mentoring, career growth, ombuds programs, recruitment, retention and much more The added benefit is the establishment of increased management focus and accountability. These reviews will provide benchmarks for the Laboratory, identifying what works well and what can benefit from improvement.

I look forward to conducting these reviews and learning how our directorates and programs are meeting their workforce needs.

Mara named deputy director

After taking on assignments such as W program leader, deputy project manager for the National Ignition Facility, and associate director for Engineering, Glenn Mara has been named as Deputy Director for Operations.

The appointment was made by Director Michael Anastasio and confirmed Thursday by the University of California Regents and by the National Nuclear Security Administration.

In making his appointment, Anastasio said that Mara is ideally suited for the role of deputy director. "Glenn will continue to focus on the quality and efficiency of operations across the Lab," said Anastasio. "He will be responsible for all LLNL operational aspects and elements and will assure our performance meets all requirements and regulations. I am very pleased he has accepted this position."

Mara has served as the acting deputy since July. As deputy director it will be Mara's responsibility to continue to foster successful relationships between the Laboratory, University of California, National Nuclear Security Administration, DOE and external partners, such

See **MARA,** *page 8*

MARCIA JOHNSON/TID

"My view of management is that it is truly a contact sport."

"In short, we are defining and setting the course of the Lab for the next 50 years."

"I will do everything I can to continue to foster the free flow of ideas and debate."

Lab teams garner six R&D 100 awards

By Stephen Wampler
NEWSLINE STAFF WRITER

Laboratory researchers have posted one of their finest years in developing top-flight technologies with commercial potential.

Six teams of LLNL researchers, including two with industrial collaborators, captured plaques from the trade journal *R&D Magazine* out of the top 100 indus-

See **R&D 100,** *page 7*

The solid state heat-capacity laser, with an output power of 13,000 watts, is the most powerful solid-state laser system in the world.

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Quantum computing

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LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Monday 21

In honor of Disabilities Awareness Week, **free beginning sign language classes** will be offered Mondays and Wednesdays through Nov. 27 at noon in Bldg. 571, room 2000, beginning today. Bring your lunch. Contact: Carol Sandoli, 3-4385.

• • •

The Compensation Division is hosting an employee informational meeting at 11 a.m. today and again at 1 p.m. Thursday in the Bldg. 543 auditorium. The presentation, **"Developing Our Salary Program: An Overview,"** will cover such topics as the Laboratory salary policy and components of the Compensation Increase Plan that is submitted annually to DOE and UC. All employees are invited. (Please note: This is the same information presented at the salary administrators meeting in August or any of the other Compensation brown bags.)

Tuesday 22

In honor of **Disabilities Awareness Week**, the Diversity and Work Life Programs Office has invited clinical psychologist Alette Coble-Temple to speak at the Lab at noon in the Bldg. 543 auditorium. She will share her experiences as a professional psychologist with a disability through her education, certification and work life stories.

Wednesday 23

Flu shot clinics will be held 10 a.m. to 2 p.m. in the West Cafeteria. Health Services received 2,500 doses and is offering them to Lab workers at no cost. Additional clinics will be offered on Oct. 29 from 10 a.m.-2 p.m. in the South Cafeteria and on Oct. 30 from 10 a.m.-2 p.m. in the Central Cafeteria.

Thursday 24

In honor of Hispanic Heritage Month, Stanford associate professor Luis Fraga will discuss **"Race, Ethnicity and the Future of California,"** at noon in the Bldg. 123 auditorium. Contact: Michelle Cardenas, 3-2796.

Friday 25

The Benefits Office will continue the brown-bag series on how to **enhance your financial security** by participating in the Tax-Deferred 403(b). Today's session will be held from 12:15-1:15 p.m. in Bldg. 571, conference room 2301. Attendance is open and no pre-registration is required.

Broadcast Schedule

Lab TV

The **DDLS talk by Anthony J. Leggett** on "Bell's Theorem, Entanglement, Teleportation, Quantum Computing and All That," will be broadcast on Lab Channel 2 Thursday at 10 a.m., noon, 2, 4, and 8 p.m., and on Friday, Oct. 25, at 4 p.m.

Lab shines spotlight on counterterrorism

Terry Turchie

The Laboratory's Spotlight on Science series will feature counterterrorism expert Terry Turchie, who will address "In Pursuit of Justice: The War on Terror" at 7 p.m. Thursday at the Amador High School Playhouse, 1555 Santa Rita Road in Pleasanton.

This free community lecture will highlight the manhunt for domestic and international terrorists, go inside the mind of terrorists, and discuss aspects of several major terrorist investigations, including the search for the UNABOMBER, the Centennial Olympic Park bombing of 1996, the attack on the USS Cole in October 2000 and the terrorist attack on the World Trade Center on Sept. 11, 2001.

"An understanding of the events leading to these diverse terrorist attacks and the complexities in resolving terrorism cases will assist in providing a foundation for what we can expect to see in the future as the war on terror unfolds," said Turchie, former deputy assistant director, FBI Counterterrorism Division.

He is currently manager of the SAFE Program, the Laboratory's Counterintelligence/Counterterrorism Program.

The lecture series, "Spotlight on Science," is designed to address current topics in science and present them in an understandable way to the community.

This is the fourth year the Laboratory has offered this series.

For more information about the Lab's Spotlight on Science series, go to http://www.llnl.gov/llnl/06news/Community/lecture.html or call 2-4599.

IN MEMORIAM

Randall Kennedy

A memorial service for Lab retiree Randall Boyd (Ken) Kennedy will be held at 1 p.m. Saturday at the Church of Jesus Christ of Latter-day Saints, 950 Mocho St., Livermore. He died Wednesday at his home. He was 67,

Friends may greet the family from 11:30 a.m. to 12:30 p.m. on Saturday prior to the service.

Kennedy was born May 17, 1935 in Randolph, Utah. He served in the U.S. Army and the U.S. Air Force.

He joined the Laboratory in 1966 as an electrical engineer and retired in 1994. He then worked at Sandia National Laboratory from 1995 through 1999.

Kennedy is survived by his wife of 37 years, Sonya Kennedy of Livermore; daughters Holly Barnes of Livermore, Heather Cummens of Horseheads, New York, Jill Probst of Brentwood, and Pamela Sanchez of West Valley, Utah; sister Lorraine Palmer of Fort Collins, Colo.; brother Donald Kennedy of Waverly, Ill.; and nine grandchildren.

Burial will be in Odgen, Utah. Memorial donations may be made to the Missionary Fund of the Church of Jesus Christ of Latter-day Saints,and should be made out to the Livermore Third Ward, 612 Silver Sage Court, Livermore, Calif., 94550.

Rodney Kramer

Longtime Lab employee Rodney E. Kramer died Saturday, Oct. 12. He was 57.

Born in Portland, Ore., June 16, 1945, Kramer was a political scientist in the Z Division for 22 years.

Kramer was an active volunteer with Our Savior Lutheran Church in Livermore and enjoyed reading, computer games, science fiction and history.

He is survived by his wife of 32 years, Lynn Kramer of Livermore; daughters Corliss Kramer of Alexandria, Va., Lorraine Kramer of Alexandria Va. and Harriet Kramer and Britany Kramer of Livermore; brothers, Michael Kramer of Minot, N.D., Russel Kramer of Fresno and Steve Kramer of Portland, Ore.

Services will be at 3 p.m. Sunday at Our Savior Lutheran Church, 1385 S. Livermore Ave., Livermore. Burial will be private.

Memorial donations may be sent to Our Savior Lutheran Church, c/o building fund, 1385 S. Livermore Ave., Livermore 94550.

Dorothy 'Dot' Svets

A memorial service for Lab retiree Dorothy "Dot" Svets will be held at 1:30 p.m. Sunday at the Livermore Presbyterian Church, 2020 Fifth Street.

A community recreation and activities leader for the Livermore Area Recreation and Park District for 20 years and for the Laboratory for 18 years, Svets died Oct. 13 in Pittsburg of complications following a stroke. She was 80.

Svets was born Jan. 15, 1922, in Sebastopol. During World War II, she worked for a ship repair company and as a WAVE in the Coast Guard Reserve, participating in a port security group patrolling the docks.

Svets joined the Laboratory in 1981 as Recreation and Leisure Services manager. During her tenure, new playing fields were built, a Lab store was opened, and new activities and exercise programs were established for employees.

Svets also led in the establishment of the Lab's day care program. She later became the Lab's community relations officer.

She was an avid, life-long tennis player and an active member of the Livermore Rotary Club, Chamber of Commerce and Soroptomists.

Svets is survived by daughters, Joyce Lewis of Twain Harte, Calif.; Sandy MacCracken of Bethesda, Md; and Mary Eala Crawford of Stockton; nine grandchildren and eight great-grandchildren. She was preceeded in death by her husband of 46 years, Andrew Svets.

In lieu of flowers, donations in her name may be given to the ValleyCare Health Library, 5698 Stoneridge Drive, Pleasanton CA 94588.

Newsline

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AROUND THE LAB

UC health care plans adjust to rising medical costs

By Elizabeth Campos Rajs
NEWSLINE STAFF WRITER

UC's Open Enrollment period will be held from Nov. 1-30 this year and there are several key changes all employees should be prepared to consider.

Due to rising medical costs, there is an increase in the employee-paid premiums for all medical plans. While UC has absorbed most of the costs, a portion will be passed on to employees beginning Jan. 1, 2003. At the same time, however, there will be a decrease in rates for employee-paid life insurance and disability insurance premiums.

Because employees will have important decisons to make during this Open Enrollment period, the Benefits Office is stepping up its services.

"We want to do everything we can to help employees understand these changes, ask questions and get clarification before Open Enrollment so they can make reasonable decisions for themselves and their families," said Pat Clelland, acting department head for Compensation, Benefits and Work/Life Programs.

For the next two months, the entire Benefits staff will be dedicated to answering Open Enrollment questions and helping employees understand the process. Benefits representatives can be reached at 2-9955.

New premium costs can be found at: http://www.llnl.gov/llnl/02employment/benefits/2003_med_rates.htm

To help defray the rising costs of medical plans, UC has introduced a new four-tiered rate structure: single, adult plus child(ren), two adults and family. The two new middle categories have lower premiums than the family category.

In addition, the University has also added a healthcare reimbursement account in which employees can set aside pretax dollars each month to pay for out-of-pocket costs not already covered by insurance, including deductibles and co-payments, prescription drugs, chiropractic care, orthodontia not covered by a dental plan and laser eye surgery.

There is a minimum annual contribution of $180 and a maximum of $5,000. Like the Dependent Care pretax accounts, however, employees should calculate their costs carefully because any money not used is not refunded at the end of the year.

"It's a use-it or lose-it account. Employees

should not put away more than they can claim for the year," said Clelland.

Additionally, UC Care has been replaced by Blue Cross Plus, and a new plan, Blue Cross PPO, has been added to the list of medical plan choices. Blue Cross began mailing letters this week to UC employees and annuitants currently enrolled in UC Care or Core plans. All UC members affected by the transition to Blue Cross will receive a letter describing the plan they will transition to as well as a brief overview of 2003 plan benefits.

UC will begin mailing Open Enrollment packets to all employees next week. The packets will include a personalized statement and booklet, the plan rates and an explanation of the new rate structure and summaries of each plan.

The Lab Benefits Office is inviting representatives from all the major medical plans, such as Health Net, Kaiser Permanente, PacifiCare and Blue Cross, to give presentations at the Lab for employees. Representatives from PacifiCare will meet with employees on Tuesday at noon in Bldg. 123 and Health Net will meet with employees on Friday, Oct. 25, at noon in the Bldg. 123 auditorium. As additional presentations are scheduled they will be announced in *Newsline* and *NewsOnLine*.

Clelland has presented the Open Enrollment changes to senior managers and management teams across the Lab. An all-employee presentation in Bldg. 123 is also planned before the start of Open Enrollment.

Following are answers to some of the most frequently asked questions:

Question. Why are the rates going up this year?

Answer. Healthcare costs are rising nationally for a number of reasons, including increased medical care costs, rising prescription drug prices, an aging population and medical plan mergers. This year, UC's rates increased more than 20 percent. While the University is bearing a large portion of the increase, a small portion of the increase is being passed on to employees.

Q. Is there an employee cost for every health plan?

A. Yes. In 2002 employees paid premiums for all health plans except Kaiser and PacifiCare. But beginning Jan. 1, there will be an employee-paid premium for all health plans.

Q. What kind of rate categories will be offered?

A. This past year, there were three categories: single, two-party and family. To help reduce costs for employees, UC has restructured the tiers to include: single, one adult with child(ren), two adults and family. The one adult with child(ren) category is less expensive than the family premium. For example, the Health Net monthly cost for an employee with children will be $31.76, while the family rate will be $51.15.

UC has also established a medical contribution base so that employees whose salary rate is less than $40,000 per year, will have a lower rate structure than those whose salary rate is more than $40,000 per year.

Q. Why is UC Care going away?

A. UC Care has been replaced by a different Point of Service Plan, which is offered by Blue Cross. Most current members of UC Care will transition into the Blue Cross Plus (Point of Service) plan. It is a two-tier plan with in-network and out-of-network levels of benefits. UC Care members who do not live in the Blue Cross Plus service area will transition into the Blue Cross PPO (preferred provider organization) plan. This includes all UC care members living outside of California and certain areas of California. In a PPO, participants do not have a primary care physician. More costs are covered if members use a PPO physician. If members go outside the network of providers, they pay more.

Q. Will I also have to pay premiums for my dental and vision plans next year?

A. No. Dental and vision care remain completely employer-paid benefits.

For more information about this year's Open Enrollment changes, visit the UC benefits Website at: http://atyourservice.ucop.edu.

Technology Enterprise Center brown bag

The Tri Valley Technology Enterprise Center (TTEC) will host its next brown bag seminar at noon Wednesday on "Patentability — Can I Get a Patent on My Invention?"

The speaker, Everitt Beers of Mcnichols, Randick, O'Dea & Tooliatos Law Firm is a patent and intellectual property law litigator who also has experience in intellectual property transactions and licensing. His practice areas include patent, copyright, trade secret, unfair competition, and trademark law. Prior to joining McNichols Randick O'Dea & Tooliatos, he was a partner in the Palo Alto office of Oppenheimer Wolff & Donnelly LLP.

He is a registered patent attorney with a technical background in computer science and engineering, including computer software and hardware, internet, and e-commerce technologies.

The seminar will be at the Livermore Science & Education Center at 250 N. Mines Road in Livermore. Please RSVP to Mike LaLumiere no later than 24 hours in advance at 371-8651 or mlalum@attbi.com

Classified ads on Web

Please note that due to space restrictions, the classified ads have been held this week. They are on available for viewing on the Web at https://www-ais.llnl.gov/newsline/ads/

NEWS YOU CAN USE

Deadline looms for conversion to password tokens

By now many of you should have received your One-Time Password (OTP) tokens in the Laboratory mail. To date more than 3,400 OTP tokens have been distributed. This work is being performed at the direction of Denise Sumikawa, director of Computer Security Technology Integration (CSTI), and in collaboration with Livermore Computing (LC).

Each OTP token displays a different, unique six-digit number every 30 seconds. This number is used in combination with your PIN (Personal Identification Number) to provide a more secure method of logging in using a technology called "two-factor authentication." Two-factor authentication means logging in using "something you have" (your OTP token) and "something you know" (your PIN). When you log in, you simply enter your LLNL Official ID (e.g., sturtevant1) as your username, and when prompted for your password, enter your PIN immediately followed by the six-digit number currently displayed on your OTP token.

The One-Time Password token is being distributed to employees through Lab mail. It is part of an effort to increase security and reduce the need for passwords.

CIO UPDATE

KEN NEVES

The distribution of OTP tokens is one part of the Lab's ongoing efforts to both (1) increase our security through a layered cyber security architecture, and (2) reduce the need for many passwords that require periodic manual changing.

Because two-factor authentication is more secure than single-factor authentication (such as reusable passwords), many LLNL institutional electronic services are being converted to require the use of OTP tokens for logins. On Monday, Oct. 28, the following Remote Access Services will require LLNL users possessing an OTP token to use their tokens for logging in: IPA, WPS, WPS-C, VPN and VPN-C. (One-Time Passwords for the Lab dial-up service (OTS) will become mandatory at a later date.) If you have your token now, please begin using it immediately with these services so that any problems you may encounter can be resolved before the mandatory use date.

If you are a remote access user (either on-site or remote) and have not received your OTP token yet, yours will be arriving in a future distribution. Until then, you will be able to continue using your existing username and password for remote access. If you have any questions regarding OTP, or problems with your token, please visit https://access.llnl.gov/otp or send Email to otp-help@llnl.gov.

Technical Meeting Calendar

Friday 18

INTEGRATED COMPUTING & COMMUNICATIONS
"Performance of the ALE3D Code on IBM Systems," by Ping Wang, Lawrence Berkeley National Laboratory. 9 a.m., Bldg. 451, room 1025 (uncleared area). Contact: Terry Jones, 3-9834.

PHYSICS & ADVANCED TECHNOLOGIES
"The Three-Dimensional Atom Probe: Materials Characterization on the Atomic Scale," by George Smith, Oxford University. 1:30 p.m., Bldg. 235, room 1090 (uncleared area). Contacts: Robert Rudd, 2-4292, Donna Vercelli, 2-0976.

PHYSICS & ADVANCED TECHNOLOGIES
"Practical Experiences With the St. Louis NanoSIMS," by Frank J. Stadermann, Washington University. Noon, Bldg. 319, room 205. Michael Gregg, 3-8946, or Sandra Maldonado, 3-0621.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Numerical Study of Burn Propagation in Inhomogeneous Mixtures," by David Lopez and Sutanu Sarkar, UC, San Diego. 2 p.m., Bldg. 451, room 1025 (uncleared area). Contacts: Andrew Cook, 3-2856, or Leslie Bills, 3-8927.

ENERGY & ENVIRONMENT
"Ventilation Effectiveness in the Yucca Mountain Program (YMP) Repository," by Veraun Chipman and Jim Blink, Yucca Mountain Project. 10:30 a.m., Bldg. 543 auditorium (uncleared area). Contact: Camille Vandermeer, 3-2672.

Monday 21

MATERIALS SCIENCE & TECHNOLOGY
"Hot-Wire Chemical Vapor Deposition for Thin-Film Photovoltanic Applications," by Maribeth Mason, California Institute of Technology. 2 p.m., Bldg. 235, gold room (uncleared area). Contacts: Chris Orme, 3-9509, or Roberta M. Marino, 3-7865.

MATERIALS RESEARCH INSTITUTE
"Phase Transitions and Hugoniot Equations of State of Some Selected Compounds," by Tsutomu Mashimo, Kumamoto University. 1:30 p.m., Bldg. 219, room 163 (uncleared area). Contacts: Bill Nellis, 2-7200, or Joanna Allen, 2-0620.

ELECTRONICS ENGINEERING
"Optical Splice Loss: Measurements and Mechanisms," by Frank Ryan (interview candidate). 9:30 a.m., Bldg. 141, room 1104 (uncleared area). Contact: Cathy Kenton, 4-3875.

MATERIALS SCIENCE & TECHNOLOGY
"TEM Studies of Nanostructures," by Roseann Csencsits, Argonne National Laboratory. 10 a.m., Bldg. 235, room 1090 (uncleared area). Contact: Rebecca Browning, 2-5500.

Tuesday 22

DIRECTOR'S DISTINGUISHED LECTURER SERIES
"Bell's Theorem, Entanglement, Teleportation, and Quantum Computing," by Anthony J. Leggett, University of Illinois. 3:30 p.m., Bldg. 123 auditorium. Contact: Carol Booth, 2-5214.

PHYSICS & ADVANCED TECHNOLOGIES
"Plutonium and Quantum Gravity," by George F. Chapline, Jr. 2 p.m., Bldg. 123, conference room A (uncleared area). Contact: Ralph R. Jacobs, 4-4545.

RADIATION DETECTION CENTER
"The Nuclear Compton Telescope (NCT)," by Klaus Ziock. 11 a.m., Bldg. 151, room 1209 (uncleared area). Contact: Christie Shannon, 3-6683.

Friday 25

MATERIALS SCIENCE & TECHNOLOGY
"Selective Ligation Methods for the Ordered Attachment of Proteins to Surfaces," by Julio A. Camarero, Biosecurity Support Laboratory. 3:30 p.m., Bldg. 235, Gold Room. Coffee and cookies will be served at 3:20 p.m. Contact: Rebecca Browning, 2-5500.

Monday 28

ENVIROMENTAL PROTECTION DEPARTMENT
"The Live Agents Outdoor Testing in the Czech Republic from Archaeological Time to the Present," by Miroslav Skoumal. 9 a.m., Trailer5475, room 1003 (uncleared area). Contact: Gloria Baker, 2-9342.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to tmc-submit@llnl.gov. For information on electronic mail or the newsgroup llnl.meeting, contact the registrar at registrar@llnl.gov.

AROUND THE LAB

Quantum leap into the future of scientific computing

The Director's Distinguished Lecturer Series will feature a talk by Anthony J. Leggett on "Bell's Theorem, Entanglement, Teleportation, Quantum Computing and All That," on Tuesday, Oct. 22, at 3:30 p.m. in the Bldg. 123 auditorium.

Leggett is the John D. and Catherine T. MacArthur Professor and Center for the Advanced Study professor of physics at University of Illinois at Urbana-Champaign. He is widely recognized as a world leader in the theory of low-temperature physics.

Leggett has shaped the theoretical understanding of normal and superfluid helium liquids and other strongly coupled superfluids. He set directions for research in the quantum physics of macroscopic dissipative systems and use of condensed systems to test the foundations of quantum mechanics.

One of the most surprising aspects of quantum mechanics is that under certain circumstances it does not allow individual physical systems, even when isolated, to possess properties of their own.

In the three decades since John Bell first clearly appreciated its revolutionary significance in 1964, this feature has been tested experimentally and spectacularly confirmed, in most people's opinion.

More recent discoveries show that it facilitates certain operations that are classically impossible, such as teleportation, secure-in-principle cryptography, and quantum computing (at least in principle).

This talk gives a very basic introduction to the subject and looks at recent advances that suggest that relatively macroscopic systems (Josephson devices) may be viable candidates for the elements — called qubits — of a quantum computer.

Director Mike Anastasio invites all employees to attend. The lecture will be broadcast on Lab Channel 2 Thursday, Oct. 24, at 10 a.m., noon, 2, 4, and 8 p.m., and on Friday, Oct. 25, at 4 p.m.

Anthony J. Leggett

Leggett has been a faculty member at Illinois since 1983. He is a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences and the Russian Academy of Sciences (foreign member), and is a fellow of the Royal Society (U.K.), the American Physical Society and the American Institute of Physics. He is an honorary fellow of the Institute of Physics (U.K.).

Seminars launched to explore quantum computing and information

A technical seminar series that will bring the country's foremost experts in quantum computation and quantum information to the Laboratory will begin Tuesday, Oct. 22 with the Director's Distinguished Lecturer Series talk by Anthony Leggett.

This topically focused seminar series, sponsored by the Deputy Director for Science and Technology (DDST), will feature more than 20 experts who will visit the Laboratory between October and April and will address all aspects of quantum information science.

The LLNL Quantum Computation and Information Seminar Series will bring together scientists in diverse fields such as mathematical physics, quantum logic, quantum computing and materials science for intense and interdisciplinary discussions in all aspects of quantum information science, said Patrice Turchi of Chemistry and Materials Science. Turchi is co-organizing the new series with Elaine Chandler of Defense and Nuclear Technology. The Institute for Scientific Computing Research and the Materials Research Institute will host the visiting scientists.

"These scientists are among those who played a major role in the early age of quantum computing and continue to make significant contributions in this field of science. The resulting presentations and discussions will be deeply informative," Turchi said.

In addition to the scheduled lectures, each invited scientist will spend two days at the Laboratory to meet with employees and engage in more in-depth technical discussions of the physical processes and their relevance in understanding and interpreting quantum mechanics, Turchi said.

"This is a very new topic. It has the potential for providing tremendous new capabilities in computing," Chandler said. "We have invited experts in all facets of the field to come to the Laboratory to discuss these areas and to help us get a perspective on the field and the direction the Laboratory should take."

At the end of the lecture series in April, Turchi and Chandler, along with their steering committee, will prepare a report for senior management highlighting the areas of quantum computing and quantum information that seem most useful to the Lab.

"These fields started in the '90s and represent such a different approach to computing. They will affect the way we think about computation and the way we implement complex codes on computers," Chandler said. "It is a very exciting topic."

Lab employees who are interested in participating in the technical discussions with any of the guest lecturers should contact Turchi at 2-9925 or Chandler at 2-2482.

Family reading night

JULIE KORHUMMEL/NEWSLINE

Chemistry & Materials Science AD Tomas Diaz De La Rubia participated in Family Reading Night Wednesday at Portola Elementary School in Livermore. He was one of several guest readers invited to read stories in English and Spanish for the students at Portola.

Dance presentation today for Hispanic Heritage Month

A cultural presentation by folkloric dance group Los Olmecas will be held today (Friday) in the pool picnic area. Amigos Unidos will be selling carnitas or vegetarian tacos for $5. All proceeds will benefit the Amigos Unidos scholarship program. The Laboratory Armed Forces Veterans Association will be selling drinks for $1.

For more information about Hispanic Heritage Month, contact Michelle Cardenas, 3-2796.

NEWS OF NOTE

All's fare with non-refundable airline ticket travel

By Anne M. Stark
NEWSLINE STAFF WRITER

Going on a business trip to Washington, D.C. to pick up that Lawrence Award but might be tagging on a few vacation days to visit the Smithsonian?

Don't buy a non-refundable ticket if you are unsure of your return date, or you risk forking out additional money to make the return trip home.

That's sound advice from the Lab's Travel Services personnel, who are urging employees to remember a few guidelines when purchasing airline tickets.

United, America, Delta, US Airways and Continental have recently announced significant changes to the conditions for buying and using non-refundable tickets.

Some of the changes include:

• Changes made prior to the ticketed departure date will cost an additional $100.

• If the passenger does not travel for any reason on his/her scheduled flight and does not make a change prior to departure, the ticket value can not be applied as a credit to another ticket and the full or partial value of the ticket is lost.

• If the fare allows, the traveler may stand by only on the same date of travel, for the flight departure and/or return, and pay $100 for each change.

For Northwest Airlines, changes must be made on or before the departure time for each ticketed flight segment for the ticket to retain its value, and passengers can still stand by for a same day flight at no additional charge.

"In the past, people didn't call ahead of time to change their tickets if they missed their plane," said Sarita Evans, Travel Services group leader. "Now they need to make those changes prior to the departure of the plane or they risk losing the entire value of that non-refundable ticket."

The changes in ticketing are in part due to many airlines trying to recoup costs from an industry in turmoil. Airlines are cutting service, tightening rules and charging extra fees. In addition to the restrictions on non-refundable tickets, many airlines recently have announced extra fees for paper tickets and extra for oversize luggage.

Travel Services recommends that employees use YCAL fares — specially negotiated fares available for the UC system — whenever possible. YCAL fares are available for travel on United and Southwest and are fully refundable.

In addition, employees should avoid buying a non-refundable ticket for a business trip, meeting or training if there is the possibility that the trip might be changed or canceled.

"Weigh the risk of using refundable versus a non-refundable ticket," Evans said. "Avoid using non-refundable tickets if uncertainties may arise in your trip."

Evans recommends travelers use airlines or fares that allow more flexibility in using non-refundable tickets, such as those offered by Southwest, Jet Blue and Frontier Airlines.

Airlines are now charging a $20 to $25 fee to passengers who want a paper ticket. The trend is to move to an electronic ticketing system.

When requesting tickets through the Lab's Travel Services, some employees request a paper ticket "because they like that security," Evans said.

Of the 22,000 airline tickets that Travel Services purchases each year, about 3,500 paper tickets are issued; the remainder are electronic.

"That doesn't sound like a lot, but when you tag a $25 fee to those 3,500 tickets, that's more than $87,000," Evans said. "The whole swing is to get away from paper tickets. We need to get the mindset of travelers to let the paper tickets go and rely on electronic ticketing."

Get ready to run, skate, swim or walk for HOME

By Sharon Emery
INNOVATIVE BUSINESS AND INFORMATION SERVICES

"Come on out and have fun," encourages Ed Cunniffe as the Laboratory approaches its 2002 Run for HOME and Agency Fair, to be held on Halloween, Thursday, Oct. 31.

This event kicks off the Laboratory's annual HOME fund-raising campaign. Cunniffe, the Run for HOME chair and Procurement and Materiel Department manager, is looking forward to this event, when participants can experience the excitement and energy of the Laboratory coming together for a good cause while having a lot of fun.

This year, the Laboratory Services Directorate is coordinating the various aspects of the run while the Computation Directorate, represented by Principal Deputy Associate Director Ted Michels, is managing the HOME Campaign. Members of the entire Laboratory community are encouraged to participate in the run.

The HOME Campaign helps community-based agencies, along with umbrella agencies such as the United Way and the Tri-Valley Community Fund. HOME, which stands for Helping Others More Effectively, is held each November and December. Employees contribute money to agencies of their choice through monthly payroll deduction and/or one-time check donations. Employees donated more than $1.3 million last year and the goal of this year's campaign is to raise $1.4 million.

Last year, the Run for HOME had more than 800 employee participants. A goal for this year is to encourage even more to come out and enjoy the day. Employees will have several ways to get involved on Oct. 31. At the Livermore site, they can walk, skate or run in the 3K race or participate in a 800m swim. The race will start officially at noon on West Perimeter Drive just outside parking lot Z-3, beside Bldg. 132. Participants can warm up 15 minutes before the race with a brief aerobic workout accompanied with music. The swim begins at 11 a.m. at the Lab pool.

For specific details about the Run for HOME route, see http://www-r.llnl.gov/home2002/runforhome/homeruncourse.jpg

At Site 300, runners will set out on their own 3K course at noon. An awards ceremony will immediately follow the event.

Ed Cunniffe

As in previous years, participant elapsed times will be recorded. For the first time, badge scanners will be used to document participation (Livermore site only). Serious or not-so-serious runners will be able to monitor their running time.

Employees who run, skate or walk in the event will be rewarded with bagels and cream cheese, fruit, energy bars, bottled water, and a "Run for HOME" T-shirt, commemorating both the run and the LLNL 50th anniversary.

Cunniffe said, "Everyone is encouraged to come dressed in costume." This year's theme — superheroes, chosen by Tom Brengle and the AIS committee — intends to encompass the real heroes of Sept. 11, 2001, cartoon superheroes, Lab employees who serve as heroic contributors and the agencies who work in our communities in superhero fashion.

Employees or groups are invited to use the theme when considering costumes. In past years, the Run for HOME has welcomed creatures like centipedes, star warriors, giant insects, cartoon characters, hula hoopers and a variety of otherwise inanimate objects. This year's theme should provide an additional opportunity for creative costumes.

Donation-award certificates will be presented to the fastest male and female — in the open and masters categories — after the run. There will also be some "fun" awards for the best costumes.

Everyone is invited to stroll through the Agency Fair, located in the parking lot south of Bldg. 132, Z-1. Representatives from 130 local charitable organizations will be present to share brochures and information about their activities. A local band called "Magic Moments" will perform music of the '50s and '60s while employees stroll through the booths and enjoy their lunches.

Visitors to the Agency Fair can purchase premade salads from Eurest Dining Services or egg rolls from the Chinese-American Network Group in support of its scholarship fund.

Cunniffe has participated as a runner nearly every year since the Run for HOME began in 1975. One thing about the event that has astounded him over the years is the number of charities that come out to "present their case" to the Lab employees during the Agency Fair. Cunniffe said, "Employees have an opportunity to talk directly with the folks from various charities. It will help the employees make some decisions about their HOME campaign contributions."

Cunniffe said he is grateful to the many Laboratory Services Directorate representatives and volunteers who have worked hard to coordinate the Run for HOME this year. The primary coordinators are:

• John Elliott, run co-coordinator

• Gloria Fraze, principal assistant to the run coordinator and t-shirt coordinator

• Bob Schumacher/Darrell Davis, security, emergency services, labor & custodial services, traffic control

• Randy Burton, emergency services, labor & custodial services co-coordinator

• Polly Malik, entertainment coordinator

• Mary Ernesto, budget coordinator

• Michelle Quick, food coordinator

• Mike Hodsdon, communications coordinator

• Tom Miller, time scoring

• Tom Brengle, theme and costumes awards coordinator

Next year, the Laboratory Services Directorate will chair the HOME fund-raising campaign.

For more information about the Run for Home, Agency Fair and HOME Campaign, see http://www-r.llnl.gov/home2002/

AROUND THE LAB

R&D 100

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trial inventions awarded worldwide for 2001.

This year's R&D 100 awards, dubbed the "Oscars of invention," will be presented Wednesday night during a black-tie dinner at the Navy Pier Convention Center in Chicago.

"The Laboratory continues to be a source of advanced and creative technologies that benefit the nation as well as private industry," said Hal Graboske, LLNL acting deputy director for Science and Technology. "These advances reflect the Laboratory's tradition of multidisciplinary teams working together to solve important problems."

LLNL received more R&D 100 awards this year than any other scientific institution or organization. The Lab has now garnered 91 R&D 100 awards since 1978. This year, DOE labs won a total of 26 R&D 100 awards.

This year marks the sixth time that Laboratory researchers have won six R&D 100 awards in a single year (other such years were 1999, 1994-96 and 1991). The highest total of R&D 100 awards won by Lab employees in a single year is seven, and that has happened in four different years (1987, 1988, 1997, 1998).

Other DOE laboratories winning R&D 100 awards this year were: the National Renewable Energy Laboratory, Oak Ridge National Laboratory, Sandia National Laboratories and Argonne National Laboratory, all with three awards; E.O. Lawrence Berkeley National Laboratory, Idaho National Engineering and Environmental Laboratory, and Los Alamos National Laboratory, two awards; and Brookhaven National Laboratory and Pacific Northwest National Laboratory, with one award each.

Powerful laser

Livermore laser scientists have developed the Solid-State Heat-Capacity Laser, which boasts an output power of 13,000 watts, making it the most powerful solid-state laser system in the world.

The laser has already surpassed current solid-state lasers and is expected to equal, if not exceed, power levels achieved by chemical and gas lasers in the near future. The technology for this compact, high-average-power laser offers a range of applications for military defense and industrial processing.

One possible use of the new laser could be to provide short-range (1 to 10 kilometers) defensive capabilities against battlefield threats, such as rockets, artillery and mortars. Possible industrial applications of the laser system could include welding, cutting and heat-treating metals.

The Solid-State Heat-Capacity Laser can operate continuously at 20 pulses per second for 10 seconds, or 200 pulses, allowing a quarter-inch beam to penetrate up to 1.5 inches of steel or 3 inches of aluminum.

The Livermore team that developed the laser, from the Laser Science and Technology Program, are: C. Brent Dane, Scott Fochs, Mark Rotter, Georg Albrecht, Steve Sutton, James Wintemute, William Manning, Balbir Bhachu and Bruce Roy.

Small packages for powerful lasers

A new packaging technology — called the Silicon Monolithic Microchannel (SiMM) Cooled Laser Diode Array — is an advance that allows more powerful solid-state lasers, such as the Solid-State Heat-Capacity Laser.

The SiMM Cooled Laser Diode Array technology permits the production of the smallest, most powerful and most inexpensive laser diode pumps ever. Since laser diode arrays are semiconductor devices, their performance suffers as their temperature rises. Diodes can convert about 50 percent of their electric input power into light, while the remaining 50 percent becomes heat. Thus, efficient cooling is critical for any technology that seeks to increase power output.

The SiMM technology relies on thousands of tiny 30-micron (about one third the size of a human hair) wide channels in silicon substrates to cool the laser diode bars. Cooling is achieved by water flowing through the small channels.

Team members that developed this technology, from the Laser Science and Technology Program, are: Raymond Beach, Barry Freitas, Jay Skidmore, Everett Utterback, Joseph Satariano, Jacqueline Crawford, E. Larain DiMercurio, Kurt Cutter, David Van Lue, Terri De Lima-Hergert, Catherine Reinhardt, Steve Sutton and Gary Loomis.

New advance for fighting disease

A new technology pioneered by four researchers in the Biology and Biotechnology Research Program is expected to help move the disease detection, prevention and treatment capabilities of the Human Genome Project from the laboratory to the clinic.

Known as In Situ Rolling Circle Amplification (IRCA), the advance can identify a single damaged or abnormal, disease-related DNA base out of the 6 billion in one human cell.

This technology can do in one test what several other more costly and time-consuming tests cannot achieve together: find the exact genetic location of a damaged or mutated DNA base and the extent of the damage or mutation.

IRCA may significantly speed efforts to measure the effectiveness of treatments in killing cancer tumors, thereby improving the ability of physicians to individualize cancer treatments.

Besides its medical applications, the technology could find use in agriculture, toxicology and pharmacology, immunology, veterinary medicine, anti-terrorism research and other fields.

Lab biomedical researchers who developed the technology are: Allen Christian, Melissa Pattee and Cristina Attix, along with former LLNL employee Jim Tucker, who has since taken a position as a university professor.

Medical device combats pain

The STIM-2002 is a miniaturized and inexpensive medical device that delivers low-level electrical pulses through the skin to inhibit or interfere with pain signals to the brain.

This medical device was developed under a cooperative research and development agreement between Florida-based Cyclotec Advanced Medical Technologies, LLNL and the Biophysical Laboratory of Sarov, Russia. Work on the project was done under the DOE Initiatives for Proliferation Prevention Program.

The STIM-2002 device will be able to treat ailments that affect up to 50 million people. Patients being treated annually for acute, episodic and chronic pain from wounds, surgery, arthritis or joint and muscle injuries would benefit most from the technology.

STIM-2002 can serve as an alternative or adjunct to conventional pain treatments and medications, such as anti-inflammatory, narcotic or non-narcotic agents.

Members of the LLNL team — from the Medical Technologies Program — that collaborated on the STIM-2002 are: Bill Colston Jr., Kenneth Michlitsch, Luiz Da Silva, John Marion, Alexander Rubenchik and Ted Saito.

Tool for next-generation semiconductors

Researchers from LLNL and New York-based Veeco Instruments Inc. teamed to develop a fundamental technology for high-volume manufacturing of the next generation of computer chips.

The technology, called the Production-Scale Thin Film Coating Tool, will lead to the manufacture of computer chips that are 100 times faster and have 1,000 times more memory than those available today.

Work for this effort was funded under DOE's largest-ever cooperative research and development agreement, a $250 million effort including three national labs (Livermore, Berkeley and Sandia), Intel and five other companies.

"This invention has enabled the successful advancement of the semiconductor industry toward manufacture of 100 times faster computers, which are expected to have a tremendous positive impact in everyday life, science and international economy," said Intel's Peter Silverman, director of Lithography Capital Equipment Development.

The Production-Scale Thin Film Coating Tool is the only deposition system able to apply multilayer coating thickness to within a quarter of an atom, producing a 100-fold improvement over other current technologies.

Livermore researchers, from the Extreme Ultraviolet Lithography Program, who helped develop the new tool, are: Regina Soufli, Jim Folta, Mark Schmidt, Eberhard Spiller, Chris Walton, Steve Vernon, Rick Levesque and Fred Grabner. Two former employees — Swie-In Tan and Claude Montcalm — worked on the project but have since left the Laboratory.

Storing complex scientific data

Four Livermore scientists were part of a four-institution team that created a file format and software library for storing, managing and archiving large and complex sets of scientific or engineering data.

Known as Hierarchical Data Format 5 (HDF5), the technology supports any type of data suitable for digital storage, no matter its origin or size. HDF5 is a fast, portable, parallel I/O library. HDF5 files can store trillions of bytes of computational results from weather or nuclear testing models, or it can handle millions of bytes of high-resolution MRI brain scans. With the help of lower-level libraries, HDF5 enables hundreds or thousands of processors to simultaneously write information to a single file.

Rigid data models for most current file formats have become an obstacle for using them in multidisciplinary science. The HDF5 technology is designed to overcome those challenges and is also expected to handle future developments in computing and data storage.

HDF5 was developed by researchers from the National Center for Supercomputing Applications at the University of Illinois (Urbana-Champaign), LLNL, Sandia National Laboratories and Los Alamos National Laboratory. Livermore researchers who worked on the HDF5 program were Robb Matzke, Linnea Cook, Mark Miller and Kim Yates.

Find out how to win an R&D award

The 2003 kickoff workshop on "How to Win An R&D 100 Award" is scheduled for 10 a.m. Tuesday, Dec. 3, in the Bldg. 170 conference room. The presentation will cover the submission criteria, assistance available through TID/IBIS, and experience from both a 2002 R&D 100 winner and judge. For more information, contact Lisa Chartrand, 2-2297.

MARA

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as the Defense Nuclear Facilities Safety Board, peer organizations and laboratories in the DOE complex, private industry and the community.

Mara recently sat down with *Newsline* to discuss the challenges and opportunities and some of his priorities in serving as deputy director.

***Newsline:* You've spent your entire career at the Lab, more than 30 years, working on the science and technology in support of programs. Why did you want this job?**

Glenn Mara: It is true that science and technology in support of programs has defined my career. And for 30 years I have had some of the most challenging and stimulating assignments at the Lab. I couldn't have written a script that would be any more fulfilling and exciting.

The Lab is now facing challenges and opportunities as great as any in our history. It has been 10 years since our last underground test in Nevada. Stockpile Stewardship is in full gear and producing, including the demanding life extension activities. Key investments like NIF and the two-stage gas gun will soon be engaged in experiments and contributing significantly to the success of the program.

The National Security mission is expanding to address Homeland Security needs, and the Energy and Environment and BBRP programs face unique challenges. In short, we are defining and setting the course of the Lab for the next 50 years. That amounts to an exciting challenge for the DDO, because the operations of the Lab must be efficient, flexible, and responsive if we are to be successful. It's also an opportunity to give something back and help attract, develop, and "set the table" for the next generation of Lab scientists, engineers, technicians, crafts men and women, administrators, and so on. It's an incredible opportunity.

***Newsline:* How will your job as deputy director differ from your predecessors?**

G.M.: The current role is more strongly aligned with Laboratory operations. In that sense it is closer to the role that Bob Kuckuck played but not identical. (Kuckuck served as DDO prior to Mike Anastasio). We have a relatively new senior management team, with three associate directors focusing on critical institutional themes (Administration and Human Resources; Safety, Security and Environmental Programs; and Laboratory Services).

I believe this organization can serve the Laboratory well, and it provides a strong team operating at the AD level. One of my challenges will be to foster teamwork and effective partnering among all the directorates to best execute the mission.

Q: What are your priorities as deputy director?

G.M.: • Deliver on our institutional and program commitments with particular emphasis on the infrastructure and operations required to be successful — quality products and operations done safely and with the proper attention on security, the environment, and the health of the workforce and the community;

• Ensure a quality workforce and work environment;

• Ensure balanced science, technology, and infrastructure investments;

• Improved quality, efficiency, and flexibility of operations;

• Build and improve upon our partnerships (DOE/NNSA, UC, LANL, etc.).

A major focus will be the Workload Reduction Initiative started by Mike Anastasio and Associate Deputy Directors Merna Hurd and Lee Younker to reduce low value activities, streamline operations, and improve management systems. NNSA is committed to this effort and we are major players.

MARCIA JOHNSON/TID

Kinnon Ernst assists Glenn Mara in his role as deputy director for Operations.

Q: Will you participate in the upcoming workforce reviews?

G.M.: Yes. These reviews provide the opportunity for the senior managers to address, in a common forum, our most important resource — the people.

Q: Do you expect any significant institutional changes in any of the key areas?

G.M.: I would describe any changes as continued improvements. Consider the area of operational efficiency and flexibility. Over the past decade, the Lab has made significant progress in cutting costs. In concert with DOE/NNSA we are now engaged in working to streamline processes, improve management systems, and eliminate low value bureaucratic activities.

As we set G&A budgets, we are placing emphasis on institutional investments in operations and infrastructure that have broad value to all Laboratory organizations.

Our 10-year institutional plan and facility maintenance strategy have gotten excellent recognition outside the Lab; we are now placing additional emphasis on strategic investments and site utilization, particularly in light of homeland security and the need to protect LLNL physical assets.

We are committed to restructuring the performance management system, and I expect that the Workforce Reviews will reinforce attaining that objective. The AD Salary Committee and the Survey Action Team implementation are also key.

With regard to the quality of the work environment, I believe we have an exceptional workplace that we can continue to improve upon. What is needed are some enhancements, not a major overhaul. This includes the investments identified by the SAT members. We have already committed FY03 funds to make solid progress in this area.

We have an aging workforce and critical skills that must be sustained and new capabilities that must be acquired. Bringing along the next generation workforce and leaders is of paramount importance. Our projected rates of attrition coupled with modest program growth afford an excellent opportunity to hire — clearly one of the most important and lasting decisions we make in managing the workplace.

In these and other areas, we can and will make changes to enable the Laboratory to deal with the challenges and opportunities that will define our next 50 years.

Q: You have been in this job as an acting deputy for a few months. Is the view different in this job from other areas of the lab?

G.M.: The view is not as different as one might think. It is different in the sense that my previous roles had me interact with a wide range of DOE organizations, the other labs, industry, and many University partners. But now it's in an expanded role, with much more of an institutional perspective. It also includes greater emphasis on the community and additional parts of the University and DOE.

A concern I have is that it is very easy to become removed from the heartbeat and pulse of the Lab. You are dealing with many external drivers and pressures that take you away from the "action". You can quickly become isolated living on the fifth floor of Bldg. 111. The key is to strike the right balance — avoid getting immersed and overwhelmed by the magnitude of Laboratory operational details, while keeping a finger on that vital pulse.

Q: How would you describe your management style?

G.M.: I'm a very hands-on manager and my view of management is that it is truly a contact sport. I wouldn't know how to do it any other way. So that's why I make a concerted effort to have a good fraction of my meetings and interactions out of the office and away from the fifth floor.

Q: Talk about the relationship between the director, the two deputies and the executive officer. How do you envision working with them on a day-to-day basis?

G.M.: I think it's imperative that we develop into a well coordinated and synchronized team, particularly when one considers the number of relatively new senior managers. We're fortunate that we have stability in the Director's Office staff. I think the chemistry of the group is very good and we have started off well. A key feature is that Mike Anastasio has made a commitment to working closely with the group of ADs and his senior staff, placing emphasis on senior management teamwork and cross-directorate partnering. I'm excited about the prospects and the potential of this team.

Q: If employees have ideas on some of the things you've outlined, are you open to hearing from them?

G.M.: Without question. I'm open to ideas, whether it's how to do a program better or a new S&T investment that might pay off for homeland security, or just how we move traffic around the Lab. The best things that have come out of this Lab clearly have roots in the creativity of the workforce. It's part of our culture and I will do everything I can to continue to foster the free flow of ideas and debate. The Lab has a rich history that includes an incredible degree of personal and professional freedom combined with prudent risk taking. We can't lose that important element of our "genetic code." It is a critical part of what defines LLNL as a great national laboratory, and will serve us well as we go into our next 50 years.

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